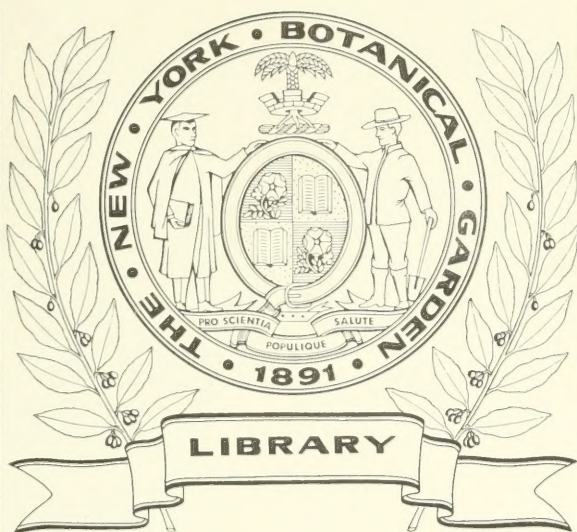


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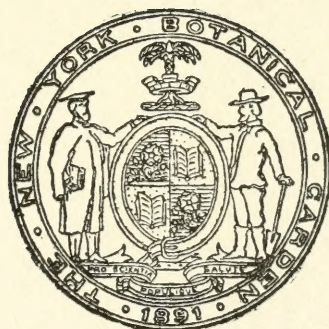
Vol. 8
1923



ADDISONIA

COLORED ILLUSTRATIONS
AND
POPULAR DESCRIPTIONS
OF
PLANTS

VOLUME 8
1923



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(ADDISON BROWN FUND)

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VOLUME 8 NUMBER 1

MARCH, 1923



PUBLISHED BY
THE NEW YORK BOTANICAL GARDEN
(ADDISON BROWN FUND)
MAY 15, 1923

ANNOUNCEMENT

A bequest made to the New York Botanical Garden by its late President, Judge Addison Brown, established the

ADDISON BROWN FUND

"the income and accumulations from which shall be applied to the founding and publication, as soon as practicable, and to the maintenance (aided by subscriptions therefor), of a high-class magazine bearing my name, devoted exclusively to the illustration by colored plates of the plants of the United States and its territorial possessions, and of other plants flowering in said Garden or its conservatories; with suitable descriptions in popular language, and any desirable notes and synonymy, and a brief statement of the known properties and uses of the plants illustrated."

The preparation and publication of the work have been referred to Dr. John Hendley Barnhart, Bibliographer, and Dr. Henry Allan Gleason, Assistant Director.

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EUGENIA BUXIFOLIA

EUGENIA BUXIFOLIA

Helmet-stopper

Native of Chile

Family MYRTACEAE

MYRTLE Family

Eugenia buxifolia Philippi, *Linnaea* 28: 640. 1856.

The genus *Eugenia* comprises many kinds of aromatic shrubs and trees of tropical and southern temperate regions. Some of them are of great economic importance. The genus is based on the Surinam-cherry (*Eugenia uniflora*), which is a well-known food plant of the tropics. The name is intended to commemorate the gardening and botanical activities of Prince Eugene of Savoy (1663-1736).

The specimens from which this species was first described came from the foot of the volcano Pise, or in the aboriginal tongue Osorno, Chile; they were collected in February, 1852. The specific name—"buxifolia"—of this Chilean plant duplicated and is antedated by that of the Spanish-stopper—*Eugenia buxifolia*—of Florida and the West Indies, a distantly related species.

Specimens of the plant in question have been grown in the Royal Gardens, Kew, evidently, and distributed under the name *Eugenia buxifolia* Philippi for many years. In 1901 living plants were brought from Kew to the New York Botanical Garden, where they have since been grown under glass. Here they bloom in summer (July-August) and fruit in winter (December-January). This plant differs from the four species of Florida, which represent a more familiar group of the genus, in its minute sepals and the three fugacious petals and slightly more persistent fourth one, which stands erect and resembles a dipper or a helmet. In fact, some botanists would class this *Eugenia buxifolia* and its relatives in a separate genus.

The helmet-stopper is a shrub or small tree with brown glabrous twigs. The leaves are opposite, and rather numerous; the blades are thin-coriaceous, cuneate-obovate to elliptic, obtuse, entire, dull, only slightly paler beneath than above, glabrous, decidedly narrowed to the petiole-like base. The flowers are usually five or seven together, in axillary short-stalked cymes, with triangular bractlets. The hypanthium is turbinate to campanulate, narrowed

or constricted at the base, glabrous, green, minutely glandular-pustulate, produced beyond the ovary. The four sepals are very short, much broader than high, very much shorter than the hypanthium. The corolla is dome-shaped in the bud, green or greenish-white. The four petals are suborbicular, about a twelfth of an inch in diameter, strongly concave, sparingly punctate, promptly falling away, except a dipper-like or helmet-like one which is more persistent than the others. The stamens are erect, about twenty or fewer, with white filaments and yellow anthers. The style is subulate, mostly shorter than the stamens. The fruits are solitary or clustered, globose, purple-black, shiny, usually with one brown seed, crowned with the persistent rim of the hypanthium and the calyx.

JOHN K. SMALL.

EXPLANATION OF PLATE. Fig. 1.—Flowering twig. Fig. 2.—Fruiting branch. Fig. 3.—Flower showing minute sepals, the one somewhat persistent petal, stamens, and style, $\times 3$. Fig. 4.—The three fugacious petals, $\times 3$. Fig. 5.—Hypanthium, $\times 3$.



VERBENA VENOSA

(Plate 258)

VERBENA VENOSA

Strong-veined Verbena

Native of southern Brazil and Argentina

Family VERBENACEÆ

VERVAIN Family

Verbena venosa Gill. & Hook. Bot. Misc. 1: 167. 1830.

Botanical travelers to temperate South America during the last century have brought back many new species of the genus *Verbena* which, by a very few forms, had been so well known to the early botanists of Europe. Thus, whereas Pliny mentions but one, Gerard two, and Linnaeus fourteen, Humboldt returned with fourteen species, of which thirteen were new to science; and Dr. Gillies, the discoverer of *Verbena venosa*, crossing South America in the latitude of Buenos Aires, collected twenty-four, of which eighteen had not yet been described. This was nearly a hundred years ago, and now subsequent discoveries have brought the number of known species up to more than eighty.

The common name "vervain" is merely the Latin name corrupted by the French with the familiar interchange of b and v, into vervayne or verveine, and later adopted by the English with slight modification, as has been the case with the names of so many garden flowers.

Our subject is one of the prettiest and most satisfactory garden species of a genus in which many of the forms are rather weedy and of little horticultural merit. The effect in mass bedding is very pleasing when its bright purple flowers are set off by the clear white of alyssum or candytuft. One may well ascribe to it the charming qualities of beneficent magic which made the type of the genus (*V. officinalis*) the symbol of joy and hospitality among the Ancients. Every summer it may be seen blooming in the flower beds near Conservatory Range No. 1 at the New York Botanical Garden. The accompanying plate is from a painting of a plant grown from seed purchased from J. M. Thorburn & Co. in 1916.

At the time of its discovery, Dr. Gillies sent seeds to the botanic gardens of Edinburgh and Glasgow, from which plants were grown under glass. A year or two later, in 1832, a colored plate (No.

3127) appeared in volume 59 of Curtis's Botanical Magazine. During the great popularity of verbenas in the last century many varieties of this species were offered in the horticultural trade. The range of color from sky-blue to bright purple is not so great as that of other garden species of the group. Because of its tuberous roots, it may be treated as a perennial, plants being held over in a protected place; but as a rule, it is found more satisfactory to grow the plants as annuals, sowing the seeds in February or March, pricking them out into flats, thence to thumb-pots from which they may be set out into the beds where they are to bloom. Their best display will be during the middle and later part of the summer.

The strong-veined verbenas grow about a foot high, with simple rhizomatic stems, creeping at the base and ascending to hold the pretty panicles of purple flowers up to view. The sharply four-angled stems and opposite leaves remind one of the mints, to which family this whole group is rather closely related. The leaves are oblong-lanceolate in outline, sharply and irregularly serrate, sessile and partly clasping the stem. Their surface is quite rough and the veins are strongly marked and deeply depressed from the upper surface, a character to which the specific name alludes. The individual flowers with their long curved corolla-tube, three times the length of the calyx, bear five large segments of the limb which collectively give the beauty to the panicle. Half-way down, within the tube, the four stamens are inserted, with their ovate-lanceolate anthers borne on short filaments. The capitate spurred stigma is raised about half-way up the corolla-tube and the base of the pistil develops the fruit as four nutlets or achenes. The characters which distinguish this verbenas from other garden forms are the paniced inflorescence and the tuberous roots.

JAMES A. CRAWFORD.

EXPLANATION OF PLATE. Fig. 1.—Summit of stem, with flowers. Fig. 2.—Corolla, split open, showing stamens, $\times 2$. Fig. 3.—Fruit, $\times 2$. Fig. 4.—Seed, $\times 5$.



PARSONSIA MICROPETALA

(Plate 259)

PARSONSIA MICROPETALA**Small-petaled Parsonsia***Native of Mexico*

Family LYTHRACEÆ

LOOSESTRIFE Family

Cuphea micropetala H.B.K. Nov. Gen. & Sp. 6: 209. 1823.*Parsonsia micropetala* Hitchc. Rep. Mo. Bot. Gard. 4: 87. 1893.

This odd-looking conservatory plant was found growing in the gardens of Mexico just a century ago, by Alexander von Humboldt. It belongs to a large group of plants of unusual floral structure inhabiting the warmer regions of the New World. The genus is best known to gardeners by the cigar flower, *Parsonsia ignea* or *Cuphea ignea*, frequently seen growing as an out-door annual. The plant of our plate is well suited for conservatory culture and can be easily grown from seed. Its unusual flowers make it an object of interest to those acquainted with floral structure; for in it we have a reversal of the ordinary predominance of corolla over calyx, the petals of this plant being almost invisibly minute and the united sepals forming the large and showy part of the flower.

Though it is possible to propagate the parsoncias from cuttings taken from the half-ripe stems in March or April and rooted in sand with bottom heat, it will be found more satisfactory to sow seeds a couple of months earlier, transplanting them as they grow until the mature plant occupies a six-inch pot, which is quite large enough for flowering specimens. The soil best adapted for these plants is one rather rich, but by no means heavy.

On a detailed inspection, we find the small-flowered parsonsia to agree well with the original description and plate in that beautiful work on the plants of tropical America published a century ago at Paris by Humboldt, Bonpland, and Kunth, "*Nova genera et species plantarum*." The stems are somewhat shrubby, more or less branched, and make a plant about two feet in height. The leaves are opposite, of a generally stiff and rigid appearance, ovate-lanceolate in outline, and quite acute at both apex and base. In fact, the long narrowed base gives the appearance of a petiole, especially in the case of the lower leaves, which are technically considered sessile. Like the stems and even the calyx-tube, the leaves are quite scabrous. One of the characters which distinguishes this plant from the other members of the genus likely to be met with in cultivation is the manner of bearing its solitary flowers at a point a little above the axils of the leaves. They are never

abundant; but come in succession, which is an advantage with conservatory plants. Though the pedicel starts stiffly upward, the calyx-tube is nodding, and an extension below what is morphologically the base gives the flower a queerly angular and unsymmetrical appearance. The calyx-tube is somewhat scarlet at the base, but for the most part yellow, save a spot of green at the mouth. The six petals are extremely minute, white, and shorter than the twelve calyx-teeth below which they are inserted. The eleven unequal stamens with red filaments extend beyond the teeth of the calyx. The base of the pistil ripens into a many-seeded capsule.

The plant here portrayed was grown at the conservatory of the New York Botanical Garden from seeds obtained from the Royal Botanic Garden at Kew, England, in 1902.

JAMES A. CRAWFORD.

EXPLANATION OF PLATE. Fig. 1.—Upper part of stem, with flowers. Fig. 2.—Flower, split open. Fig. 3.—Stamen, $\times 3$.



RIBES CEREUM

RIBES CEREUM

Waxy Currant

Native of the Pacific United States

Family GROSSULARIACEÆ

GOOSEBERRY Family

Ribes cereum Dougl. Trans. Hort. Soc. London 7: 512. 1830.*Cerophyllum Douglasii* Spach, Hist. Vég. 6: 153. 1838.*Ribes balsamiferum* Kellogg, Proc. Calif. Acad. 2: 94. 1861.

The cultivated currants of our gardens belong mostly to two European species, *Ribes nigrum*, the black currant, and *Ribes vulgare*, the red currant. The latter has been confused with another red currant, *Ribes rubrum*, which is wild in northern Europe. Both of these are cultivated for their fruit. Some of our native currants might be improved so as to compete in quality and size with their European cousins. The wild *R. odoratum* is scarcely inferior to the cultivated black currant. Other species are used for ornament. *Ribes aureum* and *R. odoratum*, the golden or buffalo currants, and *R. sanguineum* are cultivated for their flowers. Many others, as *R. malvaceum* and *R. nevadense*, might also be desirable. So also the species here illustrated, though the flowers and leaves are much smaller.

Ribes cereum belongs to a small group of three species, closely related and usually not distinguished. The other two species are *R. reniforme* and *R. inebrians*. They are known popularly as waxy or squaw currants. The first name they have received from a resinous or waxy substance which is secreted by the leaves, which in age become more or less covered by a hard wax. The word "squaw" is often applied in the West to anything distasteful or disagreeable. This, of course, does not apply to the color of the flower or fruit, but to the taste of the fruit and the smell of the leaves. Douglas described the fruit as "insipid." The writer has never tasted it, but if it is like that of the closely related *R. inebrians*, the squaw current of the Rocky Mountains, "mawkish" would express it better. It has a slight trace of the flavor peculiar to the black currant, but lacks all acidity, with a peculiar unpleasant sweet taste.

Ribes cereum was discovered by David Douglas at the Great Falls of the Columbia, now known as the Dalles, and introduced into

England. It is a native of and rather common in the Pacific Coast States, its distribution extending east to western Montana and northwestern Arizona. In the northeastern part of this area, the rarer *R. reniforme* is also found. In the Rocky Mountain region, they are represented by *R. inebrians*. Why the last should once have been known as and distributed from American nurseries under the name of "Intoxicating Currant" is not known.

The waxy currant is a low much-branched shrub, usually much less than three feet high. The young branches are finely hairy. The leaves are rounded-kidney-shaped, with a heart-shaped or squarely cut base, finely hairy and somewhat glandular, at least beneath, secreting a resinous or waxy substance, and with three to five blunt lobes, which are round-toothed (crenate). The flower-cluster is short, few-flowered, most commonly with only three flowers. The bracts are wedge-shaped, obtuse or squarely cut and lobed or toothed at the tip. The so-called calyx-tube is one fourth to one third of an inch long, tubular, hairy and glandular, white, greenish, or pink. The sepals are ovate, about one twelfth of an inch long, usually white or yellowish. The petals are very small, white. The berry is bright red, at least one fourth of an inch in diameter.

P. A. RYDBERG.

EXPLANATION OF PLATE. Fig. 1.—Branch in flower. Fig. 2.—Fruiting branch. Fig. 3.—Flower laid open, the calyx-tube pink, the anthers and sepals yellowish and the petals white, $\times 2$.



HAMAMELIS VERNALIS

(Plate 261)

HAMAMELIS VERNALIS

Ozark Witch-hazel

Native of the Ozark Mountain region

Family HAMAMELIDACEAE

WITCH-HAZEL Family

Hamamelis vernalis Sargent, Trees & Shrubs 2: 137. pl. 156. 1911.

Few botanists choose the late winter as a season to search for new species of plants in temperate climates. That is undoubtedly the reason why such a distinct and noteworthy species as *Hamamelis vernalis* remained unrecognized and undescribed for some sixty years after its original collection by Engelmann in 1845. In the character of its fruit and leaves, which alone are visible during the collecting season of the average botanist, it is scarcely distinguishable from the common witch-hazel, *Hamamelis virginiana*, which was illustrated in an earlier number of this journal (plate 142), and early collections of it were probably referred by the collectors to this well-known eastern species. The differences lie in the color of the flowers and in the time of their appearance, which in this Ozarkian species is late winter, while the eastern witch-hazel blooms in autumn. It is probably distributed throughout the Ozark region, and is known to be native in Missouri, Arkansas, and Oklahoma.

Little is known about the horticultural value of the Ozark witch-hazel. Vigorous and perfectly hardy specimens are growing on the grounds of the New York Botanical Garden and furnished the material from which the accompanying plate was made. It apparently does not grow so tall as its eastern relative, and is reported by Sargent to spread by stolons and form thickets.

The Ozark witch-hazel is a freely branched shrub, reaching a height of six feet, with hairy twigs which become smooth with advancing age. Its leaves are broadly ovate in general outline, coarsely toothed around the margin, especially in the apical half, and somewhat narrowed toward the base, with petioles about one half inch long. They are smooth above, but distinctly hairy beneath along the veins and veinlets. The flowers appear in small fascicles on short stout stalks from the base of the leaves and open during the warm days of late winter. The four sepals are broadly ovate in outline, conspicuously ciliate around the margin, and dark red on their upper or inner faces. The four conspicuous petals are dull orange-red at the base, passing into pale yellow for three fourths of their length, narrowly oblong or

strap-shaped in outline, and frequently somewhat incurved or inrolled at the tip. There are four short, erect stamens. The two pistils are united below and each terminates in a short, erect style. They ripen into a hard, woody capsule, containing two cells and opening explosively at maturity, discharging the smooth black seeds to some distance.

H. A. GLEASON.

EXPLANATION OF PLATE. Fig. 1.—Flowering branch. Fig. 2.—Leaf. Fig. 3.—Immature fruit. Fig. 4.—Expanded flower, $\times 3$. Fig. 5.—Flower with petals removed, $\times 3$. Fig. 6.—Empty capsule.



SCHIZOCAPSA PLANTAGINEA

(Plate 262)

SCHIZOCAPSA PLANTAGINEA

Plantain-leaved Schizocapsa

Native of Canton province, China

Family TACCACEAE

TACCA Family

Schizocapsa plantaginea Hance, Jour. Bot. 19: 292. 1881.

It is always interesting to know and grow a plant of which, as far as we know, the world possesses only one type. We refer in botany to a monotypic genus, and have one here represented, the genus *Schizocapsa* and its only species, *S. plantaginea*. This plant was discovered in 1879 by Ernst Faber, a missionary who collected many plants in China. Botanists placed it in the Tacca or Polynesian Arrow-root Family, containing only one other genus, *Tacca*, which is found in ten species, ranging in the tropics of both hemispheres, notably in the Malay Archipelago and Polynesia. There are several species of economic importance; *Tacca oceanica*, the Pia of the Sandwich Islands, furnishes a bitter arrow-root; *T. pinnatifida*, the true Polynesian arrow-root, is collected and cultivated in the Fiji, Society, Samoa, and other islands and becomes an article of commerce.

It is not recorded that *Schizocapsa* has any economic value of this sort. The whole family consists of herbaceous plants with tubers or rhizomes, large mostly entire basal leaves of rich green color, and clusters of saucer or urn-shaped flowers, of no great beauty. With the exception of its botanical interest and a rich foliage effect, *Schizocapsa* has nothing to recommend it to cultivators; it grows rapidly in hothouses, is readily propagated by division, and, being compact, requires little bench-room.

In 1902, plants were received from the Royal Botanic Garden at Kew, England; these are probably divisions of the original plants sent from China, as they were usually sent to Kew to be cultivated. Several plants are now to be found in our Conservatories, and from one of these the illustration was made.

The plantain-leaved schizocapsa is a perennial herb, stemless, spreading by rhizomes, creeping on the surface of the soil. The leaves are all radical, rich green, petioled, lance-shaped, entire-margined and veined with one primary and fifteen to twenty secondary, deep-set nerves. A smooth terete flower-scape bears

at its summit two to four green, clasping, leaf-like bracts, which subtend an umbel of fifteen to twenty flowers, mingled with several long, thread-like filaments, which are probably abortive flower-pedicels. Each flower is on a short, angled pedicel, and consists of a greenish cup-shaped perianth-tube, attached to and surrounding the ovary, surmounted by six lobes, three of which are lanceolate, pointed, and reddish-brown, the alternate three are shorter, rounded, and with only the tip colored; each of these bearing at its base a broad-hooded filament with an anther under the hood. The ovary is one-celled, ripening into a three-sided capsule containing many seeds.

KENNETH R. BOYNTON.

EXPLANATION OF PLATE. Fig. 1.—Leaf. Fig. 2.—Tip of flowering stem. Fig. 3.—Tip of fruiting stem. Fig. 4.—Two perianth-lobes, one of each kind, each bearing a stamen, $\times 2$.



CORNUS STRICTA

CORNUS STRICTA

Stiff Cornel

Native of the southeastern United States

Family CORNACEÆ

DOGWOOD Family

Cornus stricta Lam. Encyc. 2: 116. 1786.*Cornus fastigiata* Michx. Fl. Bor. Am. 1: 92. 1803.

The dogwoods and cornels form a family of shrubs and trees of numerous uses to horticulture. There is no time of the year when some member of the genus *Cornus* or its near relatives is not of importance to the gardener. A few warm days of spring will bring out the small yellow flowers of the cornelian cherries, *Cornus mas* and *C. officinalis*; real spring will show the white bracts of our own flowering dogwood and a week or two later the Japanese tree; then we have the white-flowered shrubby cornels of the moist and woody places, which are invaluable for swamp, lakeside, and watercourse plantings in landscape, of which there are some half dozen kinds of increasing use. Many of these have attractive blue or white fruits in broad panicles later in the season. Even in winter, certain of this last type, the osiers, have deep purple, red, or yellow twigs and when massed are very effectively used for winter color.

The stiff cornel is rather an intermediate type of plant between the low-growing shrubby osier type and our tree-like, flowering dogwood, being a shrub of rather tree-like growth at times. It is closely related to our common northern *Cornus femina*, but has peculiar steel-blue fruits, reddish stalks, and a more upright growth, and is also more southerly in its range.

Our plants of *Cornus stricta* have been growing in the Fruticetum of the Garden since 1900, when they were obtained from Biltmore, North Carolina. They flower freely each May, and later carry rather attractive though small pale blue fruits. The plant from which our illustration was taken is among these and has reached a height of nearly ten feet.

The stiff cornel is a shrub or small tree up to fifteen feet high, with gray bark below, and reddish or purplish smooth bark above and on the twigs. The leaves are narrowly ovate, acuminate at the apex and wedge-shaped at the base, two or three inches long,

on short slender reddish petioles; the margins are entire or slightly toothed, the surfaces green and covered with short, closely-pressed hairs. The flowers are borne in many-forked cymes, each flower on a short pedicel; they have four petals which are white, lanceolate, acute, and inserted at the apex of the calyx-tube and its enclosed ovary, together with four slender filaments bearing small greenish anthers. The ovary is inferior; the fruit is round, about a quarter of an inch in diameter and a metallic pale blue in color.

KENNETH R. BOYNTON.

EXPLANATION OF PLATE. Fig. 1.—Flowering branch. Fig. 2.—Fruiting branch. Fig. 3.—Flower, $\times 5$.



DEUTZIA SCABRA WATERERI

(Plate 264)

DEUTZIA SCABRA WATERERI

Waterer's Deutzia

Of horticultural origin

Family HYDRANGEACEÆ

HYDRANGÆA Family

Deutzia scabra Watereri Rehder, Stand. Cycl. Hort. 993. 1914.

During a certain season of the year, our main park and garden background colors are formed by two shrubs, *Deutzia* and *Weigela*. The groups of the former genus produce flowers very freely, which are mostly white, though occasionally touched with red or pink as in the variety here illustrated. Being natives of Asia and the Himalaya Mountains, most of the deutzias are hardy as far north as New York. Our season here starts with *Deutzia gracilis*, a low, graceful white-flowered species, then we have one or two weeks' bloom from the Lemoine hybrids, varieties differing in size, color, and doubleness, followed by the standard late white and tinted varieties of *Deutzia scabra*. The variety *Watereri* represents the group having the petals tinted on the outside; the variety "Pride of Rochester" is the best of the double-flowered white ones of tall, vigorous growth; and the variety *angustifolia*, with narrower leaves and reddish stems, is also planted. All of these varieties of *D. scabra*, which is a native of Japan and China, are hardy in our latitude.

The varietal name of our subject was given in honor of Anthony Waterer, a nurseryman of Knap Hill, Woking, England, in whose nursery this and many other beautiful varieties of flowering shrubs originated. In America a single white deutzia was first sold as variety *Watereri*; about 1895, a double white sort went under this name in our nurseries; but the true variety is a single-flowered one with clear white petals touched with bright carmine on the outer sides. With its companion varieties to fill up the main season, and the use of the kinds flowering earlier, *D. scabra Watereri* contributes part of the three to four weeks of flower masses possible for the month of June. Our illustration was taken from a plant in the Fruticetum of the New York Botanical Garden.

The deutzias are propagated by hardwood cuttings, or by seeds sown in spring. They require but little care, are suited to most

soils and should be used increasingly for plantings of flowering shrubs.

Waterer's deutzia is a hard-wooded shrub, reaching a height of eight feet, with the slender trunks having gray, peeling bark, and the young twigs a smooth red bark. The leaves are dull green, two inches long, opposite, and noticeably rough on both surfaces, especially the under side; they are on short petioles, are acute at the apex, somewhat rounded or wedge-shaped at the base, and have saw-toothed margins. The flowers are narrowly bell-shaped, and there are many of them in large panicles. The short calyx has five triangular, deciduous teeth, and five oval-lanceolate petals are attached alternately with them; these are white in color, with a carmine tinge on the outer surfaces. There are ten stamens, each filament winged toward the top with two teeth, above which is the orange or yellow anther. The ovary is three- to five-celled, developing into a roundish persistent capsule containing many seeds.

KENNETH R. BOYNTON.

EXPLANATION OF PLATE. Fig. 1.—Flowering branch. Fig. 2.—Fruit. Figs. 3, 4.—Stamens, $\times 2$. Fig. 5.—Gynoecium, $\times 2$.

RECENT PLATES

- | | |
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ADDISONIA

COLORED ILLUSTRATIONS
AND
POPULAR DESCRIPTIONS
OF
PLANTS

VOLUME 8 NUMBER 2

JUNE, 1923



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ADDISON BROWN FUND

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SARCOPODIUM LYONII

SARCOPODIUM LYONII

Lyon's Sarcopodium

Native of the Philippine Islands

Family ORCHIDACEAE

ORCHID Family

Dendrobium Lyonii Ames, Orchidaceae 2: 177. 1908.*Dendrobium acuminatum* W. S. Lyon, Gard. Chron. III. 42: 210. f. 88. 1907.Not *D. acuminatum* Rolfe, 1905; nor *D. acuminatum* H. B. K. 1816.*Sarcopodium acuminatum Lyonii* Kränzl. Repert. Sp. Nov. 7: 40. 1909.*Sarcopodium Lyonii* Rolfe, Orch. Rev. 18: 240. 1910.

Sarcopodium Lyonii was originally discovered by W. S. Lyon who found specimens in the mountains of Bataan, Luzon, in May and June, 1907. In the same year it was found by H. M. Curran near the Lamao River. It occurs at an altitude of about two thousand feet and appears to be restricted to a narrow altitudinal belt. The flowers vary in color, the lip, as a rule, being more deeply stained with carmine on the lower half than on the upper half. As is shown by the plate, the floral segments are sometimes paler toward the tip than at the base. The nearest ally of *Sarcopodium Lyonii* is *S. acuminatum* Rolfe, another Philippine species which occurs at higher altitudes and is in part distinguished by its cream-colored flowers.

Under cultivation *Sarcopodium Lyonii* has not proved to be a free growing species. In fact Mr. Lyon in his early attempts to cultivate it at Manila concluded that at sea level it was less tractable than *S. acuminatum* and with difficulty kept alive. The specimens from which the accompanying plate was drawn flowered in the New York Botanical Garden in March, 1919.

The botanical relationship of *Sarcopodium* is with the vast genus *Dendrobium* which is widespread in the eastern tropics and the source of many of the most beautiful orchids known to horticulture. Although *Sarcopodium* until comparatively recent times was regarded as a section of *Dendrobium*, modern systems of classification accept it as a distinct genus, the most conspicuous character for separation from *Dendrobium* being the contraction of the stems into pseudobulbs. As at present understood, *Sarcopodium* comprises twenty or more species of which *S. Lyonii* is one of the most beautiful.

Lyon's sarcopodium is a perennial epiphytic herb. The pseudobulbs are ovoid in shape, somewhat tetragonal, subtended by brownish sheaths and terminated by two leathery, elliptic-oblong leaves which are unequally bilobed at the tip and narrowed toward the base. The peduncle is about twenty inches long, arching, bearing as many as fifteen large showy rose-carmine flowers in a loose raceme. The sepals are spreading, about one and one half inches long, tapering to an acute tip from a broad base. The petals are similar to the sepals, but narrower. The lip is three-lobed, with the lateral lobes obtuse and the middle one broadly ovate with an acute apex. The short column is often deeply stained with carmine.

OAKES AMES.

EXPLANATION OF PLATE. Fig. 1.—Pseudobulb with two leaves. Fig. 2.—Portion of the raceme. Fig. 3.—The anther-cap. Fig. 4.—Pollen-masses, $\times 3$.



SCHIZOCENTRON ELEGANS

SCHIZOCENTRON ELEGANS

Procumbent Heeria

Native of eastern Mexico

Family MELASTOMATACEÆ MEADOW-BEAUTY Family

Heeria elegans Schlecht. *Linnaea* 13: 432. 1839.*Schizocentron elegans* Meissn. *Gen. Comm.* 355. 1843.

This very charming little plant, first discovered more than seventy years ago, long remained unknown in our living collections. Indeed, until its rediscovery by the writer, it was not to be found in any of our American herbaria.

In 1901 the writer visited Jalapa, Mexico, hoping to find this plant in the vicinity of that town where it had first been discovered. One can easily imagine his surprise and delight in going out into the garden or patio of the pension to find the plant growing in abundance there.

Living plants were sent back to Washington in 1901 which flowered in 1904 but soon died. Specimens sent to the New York Botanical Garden succeeded much better and have flowered abundantly each year, making a beautiful display. In Mexico it seemed to grow equally well in shade or sunshine. It deserves to be more widely cultivated and probably would grow in the open in some of our southern States.

The plant has long passed in literature under the name of *Heeria elegans* and is in fact the type of the genus *Heeria* of Schlechtendal, but this name had been previously used and hence a new name was given the genus.

The procumbent heeria is a low creeping vine-like plant forming a dense carpet and rooting at the joints; its branches are slender, terete, reddish, with appressed pubescence; the leaves are small, opposite, ovate and short-petioled; the flowers are terminal at the ends of short branches; calyx-tube is covered with glandular bristles and has four ovate lobes; the corolla is rotate, nearly or quite an inch broad; the petals are four, purplish, orbicular; the stamens are ten, of two kinds; the ovary is crowned by a prominent lacerate disk.

J. N. ROSE.

EXPLANATION OF PLATE. Fig. 1.—Flowering plant. Fig. 2.—Part of calyx and 3 stamens, $\times 1\frac{1}{2}$. Fig. 3.—Pistil, $\times 1\frac{1}{2}$. Fig. 4.—Two kinds of stamens, $\times 2$. Fig. 5.—Fruit, $\times 2$.



LENOPHYLLUM TEXANUM

LENOPHYLLUM TEXANUM

Texas *Lenophyllum**Native of southeastern Texas*

Family CRASSULACEÆ

ORPINE Family

Sedum texanum J. G. Smith, Rep. Mo. Bot. Gard. 6: 114. 1895.*Villadia texana* Rose, Bull. N. Y. Bot. Gard. 3: 3. 1903.*Lenophyllum texanum* Rose, Smiths. Misc. Coll. 47: 162. 1904.

The genus *Lenophyllum*, of which five species have been described, is native to Texas and northern Mexico. None of the species has been extensively cultivated and the genus is scarcely known outside of the study collections of Dr. Britton and Dr. Rose in New York and Washington, respectively.

The type of the genus and the only species heretofore illustrated in color is *Lenophyllum guttatum* from Mexico. It is not well adapted for greenhouse culture. *L. texanum*, on the other hand, grows most prolifically under glass and there is danger that it may become a pernicious weed in greenhouses. The leaves, which are produced in abundance, easily drop off and each one at once starts a new colony.

The Texas *lenophyllum* is a low plant, often much branched, and the branches are elongate; the leaves are opposite, ovate, acute, somewhat fleshy, rounded on the back but boat-shaped above as in all the other species of *Lenophyllum*; the small flowers are borne near the end of the branches, usually in simple equilateral and almost spike-like racemes; they have a short but distinct tube, in this respect differing decidedly from *Sedum*. The stamens are ten, five small ones borne on the petals, and five alternating with the petals, much larger and longer than the others.

J. N. ROSE.

EXPLANATION OF PLATE. Fig. 1.—Flowering branch. Fig. 2.—Corolla split open, with stamens, $\times 2$. Fig. 3.—Carpels and scales, $\times 4$.



CALLISTEMON SALIGNUS VIRIDIFLORUS

CALLISTEMON SALIGNUS VIRIDIFLORUS

Green-flowered Bottlebrush

Native of Tasmania and Victoria

Family MYRTACEAE

MYRTLE Family

Metrosideros viridiflora Sims, Bot. Mag. *pl.* 2602. 1825.*Callistemon viridiflorus* DC. Prodr. 3: 223. 1828.*Callistemon salignus viridiflorus* F. Muell. Fragm. 4: 55. 1864.

The bottlebrushes as a class are entirely unlike any other group of ornamental shrubs. Although ungainly of habit, save when trained by judicious pruning, they never fail to attract attention because of the unique and striking arrangement of the flowers. These are assembled into dense, cylindric, and often highly colored spikes several inches long and an inch or more through. The clusters are not terminal on the twigs, as one would naturally expect, for the central axis grows on out from the summit and there produces a short tuft of normal but undersized leaves. It is this unusual floral arrangement that has given the bottlebrush its common name. There are two genera of bottlebrushes, *Melaleuca*, with the stamens united into bundles, and *Callistemon*, or true bottlebrushes, with the stamens not united. The species here figured belongs to the latter group. It was first cultivated in England, where it was introduced without name in 1824. The first description was drawn up the following year from these cultivated plants. More recently it found its way also into a few California gardens, where it becomes quite tree-like and reaches a height of thirty feet or more. These trees have erect trunks with a shreddy gray or silvery bark and narrow leafy tops. Our present illustration is from a plant grown under glass at the New York Botanical Garden.

The flowers of most species of *Callistemon* are some shade of red, this being due to the numerous red or crimson filaments rather than to the corolla, which is small and never highly colored. In the present species, however, the filaments are yellowish-green and the rather somber hue is enlivened only by the numerous golden-yellow anthers. Doubtless it will never be a favorite except among those who appreciate the unusual and the peculiar. It is easily propagated from seeds and these can be obtained best by gathering

the capsules in summer, after which they should be held in closed boxes in a warm place until the seeds have matured and shattered out. Propagation from cuttings of ripened or ripening wood is also feasible and plants so grown are said to flower sooner than those raised from seed.

Although first treated taxonomically as a distinct species, this form of *Callistemon* was reduced to a variety of *C. salignus* by Baron von Mueller, the noted Australian botanist. The variety *viridiflorus* differs from typical *salignus* only in having smaller leaves with less conspicuous veins and the flowers are perhaps a trifle larger and somewhat greener. In the original *C. salignus* the flowers are sometimes reddish. The typical form of the species has a wide range in southeastern Australia, including Tasmania, whereas *viridiflorus* seems to be confined to Tasmania and adjacent Victoria.

This bottlebrush is often a tall shrub, as seen in gardens, but it sometimes grows to a height of thirty or forty feet and is then decidedly tree-like. The leaf-blades are lance-shaped, one to two inches long, entire, sharply pointed, and lightly feather-veined. The very young foliage of sterile shoots is silvery-silky but the mature leaves are smooth, green, and marked with the minute resin-dots so characteristic of the Myrtle family. The greenish-yellow flowers are borne in dense, cylindric clusters which, when well developed, are 3 or 4 inches long and more than an inch in diameter. The stem which forms the axis of this cluster continues to grow after the flowers are formed and usually bears a short tuft of leaves at the summit of the peculiar bottlebrush-like inflorescence. Each flower has an inferior ovary which is closely sessile on the axis and is terminated by five small brown teeth, or calyx-lobes. The petals are five in number, quite small, and of a greenish color. They fall away as the flower matures. The attractiveness of the flowers is due to the stamens, which are so numerous and long as to almost completely mask the other floral structures. Their filaments are yellowish green but the anthers are of a bright yellow color, so that the surface of the flower-cluster is covered with yellow dots. The style is single and somewhat longer than the stamens. All of the floral parts are deciduous except the ovary, which matures into a three- or four-celled, brown or gray cup-like capsule. Some of these cups remain attached to the twigs for several years but they are too small and scattering to form the knobby club-like growths sometimes seen on other species of bottlebrush.

H. M. HALL.

EXPLANATION OF PLATE. Fig. 1.—Flowering branch. Fig. 2.—Single flower. Fig. 3.—Portion of fruiting branch.



CALANTHE VESTITA REGNIERI

CALANTHE VESTITA REGNIERI

Regnier's Calanthe

Native of Cochin-China

Family ORCHIDACEAE

ORCHID Family

Calanthe Regnieri Reichb. f. Gard. Chron. II. 19: 274. 1883.*Calanthe vestita Regnieri* Veitch, Man. Orch. Pl. 6: 70. 1890.

The history of *Calanthe vestita* carries us back to the early days of orchid culture. It was originally discovered by Dr. Nathaniel Wallich in Tenasserim some time in 1826, but was not introduced to horticulture until 1848 when Dr. Kane sent living specimens to England from Moulmein. The variety *Regnieri* was found in Cochin-China and offered for sale in 1883 in London. *Calanthe vestita* and its varieties have entered largely into the production of garden hybrids, the best known of these hybrids being *Calanthe Veitchii* which was raised in 1856 in the same year that *Calanthe Dominyi*, the first artificially produced orchid hybrid, made its appearance. The varieties of *C. vestita* are chiefly distinguished by the colors of the flowers. The variety *Regnieri* is usually characterized by the less deeply lobed lip which is rose color with a rose-purple blotch at the base and by the rose-purple claw. The variety itself is variable and several so-called sub-varieties have been recognized in horticultural practice. Examples of these are Sander's variety in which the flowers are rosy carmine, Stevens' variety in which the flowers are white with a small rose-colored blotch on the disc of the lip, and Williams' variety which has the petals and lateral sepals pencilled with rosy carmine, the lip being deep carmine with a crimson-purple blotch on the disc.

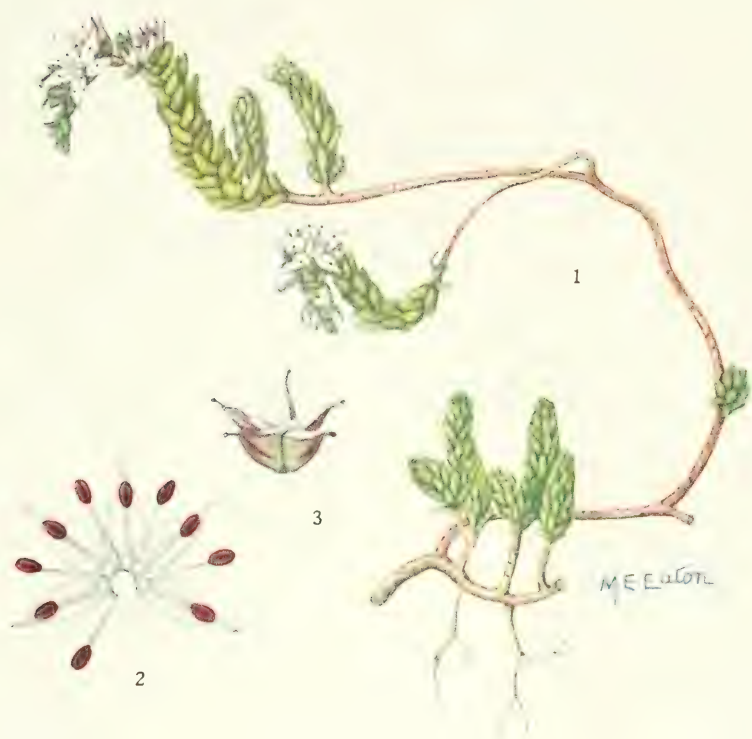
As *Calanthe vestita* is a native of the hot tropics it should be cultivated in company with East Indian plants. After flowering the pseudobulbs should be allowed a period of rest.

The pale greenish gray pseudobulbs of Regnier's calanthe are elongate, bluntly angulate, and constricted near the middle. The leaves appear after the flowers and are broadly lanceolate, tapering gradually to an acute tip. The peduncle is erect, very hairy, and terminates in a loose raceme of large, showy flowers. The sepals and petals are subequal and elliptic in outline. The lip is flat,

conspicuously four-lobed, with a slender greenish spur at the base. The column is fleshy and usually deeply stained with carmine.

OAKES AMES.

EXPLANATION OF PLATE. Fig. 1.—Scape with raceme. Fig. 2.—Pseudobulbs, with new growths of leaves from the base. Fig. 3.—Anther. Fig. 4.—Eight pollen-masses, $\times 4$. Fig. 5.—Base of labellum, $\times 2$.



SEDUM DIFFUSUM

SEDUM DIFFUSUM

Spreading Stonecrop

Native of Monterey, Mexico

Family CRASSULACEÆ

ORPINE Family

Sedum diffusum S. Wats. Proc. Am. Acad. 25: 148. 1890.

The genus *Sedum* contains about five hundred species of which more than one hundred and fifty are now in cultivation. There is great diversity among the species even after certain groups usually treated under *Sedum*, have been segregated, such as *Rhodiola*, *Villadia*, and *Clementsia*. Many of the species are ornamental and have been widely grown for carpet and formal bedding and, as is well known, many are used for all kinds of rock-work.

In recent years Mexico has yielded many new species, some of which are very attractive and have been widely introduced into cultivation. In 1890 Sereno Watson described a *Sedum* collected by C. G. Pringle near Monterey, Mexico, but it was not introduced into cultivation until 1921 when Robert Runyon rediscovered it at the type locality. Since then it has been extensively grown at Washington and in the New York Botanical Garden. It grows rapidly, flowering freely and promises to be a valuable acquisition to our ornamental species of *Sedum*. It is well named *diffusum* for it grows prostrate in dense mats or when planted in pots hangs over the sides and roots when the branches reach the benches.

The stems of the spreading stonecrop are slender, green or becoming purple and four to twelve inches long, freely branching; the leaves are alternate but closely set, bluish green, glaucous, less than half an inch long, narrow and terete; the flowers are borne in terminal, secund, leafy racemes, sometimes two inches long, white, tinged on the outside with pink, rotate and less than half an inch broad; the sepals are green, small and leaf-like; the five petals are ovate and pointed; the ten anthers are brownish; the carpels are five, spreading, truncate and brownish.

J. N. ROSE.

EXPLANATION OF PLATE. Fig. 1.—Portion of flowering plant. Fig. 2.—Corolla, split open, with stamens, $\times 3$. Fig. 3.—Fruit, $\times 3$.



COREOPSIS VERTICILLATA

COREOPSIS VERTICILLATA

Whorled Tickseed

Native of the eastern United States

Family CARDUACEAE

THISTLE Family

Coreopsis verticillata L. Sp. Pl. 907. 1753.

The genus *Coreopsis* includes more than fifty species, a majority of which are found in the eastern and southeastern United States, while a smaller number range also through the western states and others are native to South America, South Africa, and Australia. They are all annual or perennial herbs, blooming in summer and early autumn, when they bear conspicuous yellow, rose, brown, or bicolored heads of flowers. Many of them are well worthy of cultivation, and not a few have found their way into the American trade, sometimes under the generic name *Calliopsis*. The accepted English name for the group as a whole is tickseed.

Coreopsis verticillata is an inhabitant of dry soil, on hills and in open woodlands, and is distributed from Maryland to South Carolina and westward as far as Nebraska and Arkansas. The plant represented on the accompanying plate was grown on the grounds of the New York Botanical Garden from seeds sent by B. F. Bush from western Missouri.

The whorled tickseed is a perennial herb from one to two feet in height, with smooth, slender, freely branched, leafy stems. The leaves are opposite and sessile, in a strict sense, but so deeply divided to the very base into three segments that a pair appears to be six distinct leaves. Each of these segments is in turn divided into several narrowly linear portions. The surface of the leaves is smooth. The heads of flowers are produced on long slender stalks terminating the stem and branches, and are usually from an inch to an inch and a half in diameter, with six to ten bright yellow, petal-like rays surrounding a dull yellow or brownish yellow cluster of disk-flowers, the whole subtended, and in bud enclosed, by an involucre. The latter is double, consisting of an outer circle of narrowly oblong green scales and an inner circle of ovate yellowish scales. The ray-flowers are neutral, bearing neither stamens nor pistil. The disk-flowers are perfect and their ovaries mature into flat, elliptic-oblong achenes, surmounted at the top with two minute teeth representing the pappus.

H. A. GLEASON.

EXPLANATION OF PLATE. Fig. 1.—Summit of flowering plant. Fig. 2.—Ray-flower, $\times 2$. Fig. 3.—Disk-flower, $\times 2$. Fig. 4.—Achene, $\times 4$.



PHLOX "ASIA"

(Plate 272)

PHLOX "ASIA"

"Asia" Summer Phlox

Garden Hybrid

Family POLEMONIACEAE

PHLOX Family

Our most useful and most popular summer and autumn herbaceous perennial is the summer phlox. The qualities which make it so are a long period of bloom at a time when color is scarce; ease of cultivation and freedom from disease; and a good choice of variety in colors, especially in carmine, salmon, and similar shades. If the old blooms are cut off, the plants tend to flower again more freely, and the trusses on long stems, are valuable as cut flowers.

The first varieties of these perennial phloxes were in dingy magenta and purple tones, but the later varieties are of more pleasing colors, and we have several desirable white sorts, and a few dwarf varieties. Our collection in the New York Botanical Garden contains about fifteen varieties in the different shades; while there are many more varieties in the trade, it is possible to select a dozen or less choice varieties representing all types and all good qualities of this flower.

A product of European horticulture, the modern summer phlox has originated from plants native to our Eastern United States. Horticulturists are not certain as to the make-up of the group, called *Phlox decussata* by gardeners, but it is probably that most of the varieties are descended from our wild *Phlox paniculata*.

The illustration of the variety "Asia," which was introduced early in the last decade, was taken from the group of it growing in the conservatory flower beds since 1913, where, with its companion variety "Europa," white with carmine eye, it is a conspicuous summer flower.

The summer phlox should be grown in a well tilled, moist soil. Some varieties spread by means of stolons to make great clumps. These may be propagated by dividing the clumps. Others do not spread very rapidly. These may be very profitably increased by stem cuttings taken in autumn. All varieties may be propagated by cutting up the roots into one to two inch lengths, scattering them over the surface of a flat of light soil, and covering with about a quarter of an inch of finely sifted soil or sand.

This summer phlox is an herbaceous perennial with tall, smooth, leafy stems which are four-sided somewhat at the base, and green; rounded and somewhat purplish or reddish color above; and from two to three feet high. The smooth leaves are opposite, the lower ones on short petioles, the upper sessile or slightly clasping; they are dark green above and glaucous beneath; lanceolate in outline, with acuminate apices. The carmine and orange or salmon-pink flowers are clustered in large panicles; they have salver-form corollas an inch or more across, with a long tube and five obovate lobes, and campanulate calyces with five green awl-shaped teeth.

KENNETH R. BOYNTON.

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ALSTROEMERIA AURANTIACA

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Orange Alstroemeria

Native of Chile

Family AMARYLLIDACEAE

AMARYLLIS Family

Alstroemeria aurantiaca D. Don, in Sweet, Brit. Fl. Gard. II. pl. 205. 1833.

The genus *Alstroemeria* contains about fifty species, of lily-like or amaryllis-like plants, natives of South America, of which a few are now in cultivation. Several beautiful varieties have been grown in greenhouses and one, our present subject, has been grown outdoors in the vicinity of New York and Boston, but under special conditions.

The group from which our illustration was taken has thrived in half shade in a protected nook in the flower beds near Conservatory Range No. 1 since 1916, and has given a show of orange-yellow bloom nearly all summer each year. It is probable that there are other species which could be flowered outdoors like this and the tubers kept in a cellar over winter.

The tender species, such as *A. Pelegrina* and *A. pulchella*, are more beautiful than the semi-hardy ones. They were commonly grown in the middle of the last century in England, when varieties in nearly all colors were offered by nurserymen.

The orange alstroemeria is a tuberous-rooted herb, with smooth leafy stems three or four feet high. The leaves are alternate, three or four inches long, linear-lanceolate, narrowed at the base into a short petiole, which is twisted so that the upper surface of the leaf becomes the lower, and vice versa. The uppermost leaves are whorled, and subtend an umbel of several peduncles three to five inches long, each bearing two or three orange-yellow flowers. The six perianth-segments vary in shape and color: the three outer are larger, ovate-oblong, curving upward and outward, orange-yellow with green tips; of the inner three the upper two are lanceolate, curving upward, orange-yellow streaked and spotted with reddish brown, sharply green-tipped, the lower is short, sparsely spotted and colored like the upper segments, and sharply declined.

KENNETH R. BOYNTON.

EXPLANATION OF PLATE. Fig. 1.—Summit of flowering stem. Fig. 2.—Gynoecium. Fig. 3.—Fruit.

NOV 19 1923



DUDLEYA ARIZONICA

DUDLEYA ARIZONICA

Arizona Dudleya

Native of western Arizona

Family CRASSULACEAE

ORPINE Family

Dudleya arizonica Rose, sp. nov.

Along the west coast of the United States is a very interesting group of Crassulaceous plants. Those first known were described as species of *Echeveria*, while a little later they were referred to the genus *Cotyledon*. In 1903, however, the few described species with a host of new ones were brought together to form a new genus called *Dudleya*,¹ named for Prof. William Russel Dudley (1849-1911) of Leland Stanford University, who for many years was one of our great teachers of botany.

Of the sixty or more species, only a few have been in general cultivation, although many of them are quite ornamental and most can be grown easily with ordinary cultivation. The succulent houses of the Department of Agriculture at Washington and of the New York Botanical Garden have grown many of the species.

Although most of the species are to be found along the Pacific coast of North America and chiefly in California and Lower California, a species or two extend into western Arizona, while an anomalous one to be discussed at another time is found in eastern Arizona. For several years we have received a very interesting *Dudleya* from Mrs. Charles Blys of Yucca, Arizona, which is here described for the first time. It most resembles *Dudleya pulverulenta*, a species of the coastal hills of San Diego County, California, and southward, but it is less pulverulent, with shorter pedicels and leaves of a different shape.

The flowering stalk of the Arizona dudleya is sometimes stiff and erect as shown in our illustration or it may be weak and sprawling. The inflorescence is usually of two to four secund racemes with stout pedicels about half an inch long. The sepals are triangular and acute. The corolla is a half inch long; the petals are dark red, erect, and obtuse at apex.

J. N. ROSE.

EXPLANATION OF PLATE. Fig. 1.—Flowering plant. Fig. 2.—Flower, split open on one side.

¹ Dr. David Starr Jordan has commented on it as follows: "A genus of stone-crops of many species abounding on the cliffs of California and especially on those which overhang the sea was named *Dudleya* by Britton & Rose."



ROSA PALUSTRIS

ROSA PALUSTRIS

Swamp Rose

Native of eastern North America

Family ROSACEAE

ROSE Family

Rosa palustris Marsh. Arbust. 135. 1785.

The swamp rose is the most common of the wild roses of eastern North America. Its range of distribution extends from Nova Scotia to Florida, Mississippi, and Minnesota. It grows usually in wet places, in open woods and copses. It is a handsome plant but does not have the large flowers and fruit of the glossy rose, *Rosa virginiana*, or the delicate foliage of the pasture rose, *Rosa carolina*.

Two or three decades ago this rose was usually known under the name *Rosa carolina* L., but the latter name was originally given by Linnaeus in the first edition of "Species plantarum" to a rose described and figured by Dillenius in his "Hortus elthamensis." Both the description and the illustration show that Dillenius' rose was our pasture rose or the same as *Rosa humilis* Marsh. Later Linnaeus received specimens of the swamp rose from America. Thinking that it was the same as his *Rosa carolina*, he modified his description in the second edition, so that it applied better to the swamp rose than to the original *R. carolina*. Most botanists have perpetuated this error. The great Belgian rhodologist, Crépin, pointed out the discrepancy as early as 1876, but was reluctant to correct the naming of the North American roses, being afraid of causing more confusion. It is only lately that American botanists have dared to apply the proper name, *Rosa palustris* Marsh., to the swamp rose. This is very appropriate, as the scientific name and the common one have the same meaning.

It is a well-known fact that many hybrids have been produced artificially among the roses, but not many persons know that natural hybrids are also found among the wild species. This fact is better recognized in Europe than in America. On account of these hybrid forms, the study of the roses, both wild and cultivated, is very difficult and the lines between the species are very hard to draw. Native hybrids of *Rosa palustris* with *Rosa blanda* Ait., *R. carolina* L., *R. johannensis* Fern., *R. nitida* Willd., *R. serrulata* Raf., and *R. virginiana* Mill. have been recorded.

The swamp rose is a shrub one to six feet high, with often reddish stems, armed with short recurved prickles, which are flattened and one sixth to one fourth of an inch long. The leaves are rather dull, glabrous above, finely short-hairy beneath, with seven, rarely nine, oblanceolate or oblong leaflets, which are one to three inches long, finely and closely toothed; the stipules (lobes on the leaf-stalks) are narrow, for a long distance united with the stalk, often glandular-toothed on the margins. The flowers are usually several in a cluster which is often flat-topped; the flower-stalks usually have stiff gland-tipped hairs or bristles. The sepals are lanceolate with long tail-like tips, glandular-hairy on the back, tomentose within. The petals are rose-red, reversed heart-shaped, three fifths to four fifths of an inch long. The fruit is globose or nearly so, a little less than half an inch broad, and usually a little broader than high, bright red when mature, and more or less covered by gland-tipped bristles.

P. A. RYDBERG.

EXPLANATION OF PLATE. Fig. 1.—Flowering branch. Fig. 2.—One of the lower leaves. Fig. 3.—Fruiting branch.



BIGNONIA RADICANS

BIGNONIA RADICANS

Trumpet-creeper

Native of the southeastern United States

Family BIGNONIACEAE TRUMPET-CREEPER Family

Bignonia radicans L. Sp. Pl. 624. 1753.*Tecoma radicans* J. St. Hil. Expos. Fam. 1: 318. 1805.*Campsis radicans* Seem. Jour. Bot. 5: 362. 1867.

The Trumpet-creeper or Trumpet-vine, one of the most showy-flowered climbers of the North American flora, grows naturally in woodlands and thickets from New Jersey westward to Illinois and Iowa, southward to subtropical Florida and Texas, and in the southern United States is locally very abundant. It is hardy farther north, however, and has established itself after planting in southeastern New York and Connecticut. Our figure illustrates a plant growing in the New York Botanical Garden.

The genus *Bignonia*, as here understood, consists only of this species and *Bignonia grandiflora* Thunberg of Japan and China, which is similar to *B. radicans* but with different flowers. This is one of the interesting illustrations of similarity in the vegetation of eastern North America and eastern Asia, like *Sassafras* and *Liriodendron*.

The name *Bignonia* was first published in 1719, by the eminent French botanist Tournefort, in his "Institutiones rei herbariae," where he included in it some fourteen species; it commemorates the Abbe Bignon who lived from 1662 to 1743 and was librarian to Louis XV. Our Trumpet-creeper was the first of these species listed by Tournefort and is crudely illustrated in plate 72 of his book. His illustration is so poor that several authors have supposed it really to represent some other plant, but inasmuch as many of his illustrations are inaccurate, there seems to be no good reason for doubting this one.

This was one of the first North American plants to be cultivated for ornament in Europe. Its first description published is that of Cornutus, in his "Canadensium plantarum historia," Paris, 1635, under the name "*Gelseminum hederaceum*," and he printed a diagrammatic illustration of it on page 103 of that rare old book. It was also illustrated, under various names, by others of the older

botanical authors. Linnaeus accepted Tournefort's name in his numerous works; in 1753 he gave binomial designations to thirteen species, all or nearly all of which are now known to represent different genera, some of them, indeed, in families other than *Bignoniaceae*.

The trumpet-creeper is a woody vine often reaching a length of forty feet, climbing on trees, or trailing, freely branching, the branches bearing aerial rootlets, the bark separating in long thin strips. It has opposite, petioled, odd-pinnate leaves eight to fifteen inches long, with from seven to fifteen short-stalked leaflets, which are ovate or lanceolate, toothed, pointed, smooth, or hairy on the veins beneath, and from one inch to about five inches long. The flowers, appearing in July or August, are borne in terminal clusters, few or several together, and nearly sessile. The calyx is tubular-campanulate, not quite an inch in length, with five ovate, acutely tipped teeth. The scarlet corolla is about two and one half inches long, its tube about three times as long as the five roundish spreading lobes which are slightly dissimilar. There are four anther-bearing stamens, in pairs. The fruit is an elongate, pointed, somewhat flattened leathery capsule, four to six inches long, over half an inch thick and stalked in the persistent calyx. The numerous flat and thin-winged seeds are borne in several rows on each side of the broad partition.

N. L. BRITTON.

EXPLANATION OF PLATE. Fig. 1.—Flowering spray. Fig. 2.—Fruit.



MENISPERMUM CANADENSE

MENISPERMUM CANADENSE**Canada Moonseed***Native of North America*

Family MENISPERMACEAE

MOONSEED Family

Menispermum canadense L. Sp. Pl. 340. 1753.

Although the present species has an extensive geographic range that includes the region from Manitoba southward to the Gulf of Mexico and eastward to the Atlantic coast, it is scattered in its distribution and is sparingly represented or lacking in many areas of considerable extent within its range. It is, therefore, not a very widely or commonly known plant, although locally it may be more or less abundant.

The genus *Menispermum*, as now recognized, includes only two, or possibly three, species. One is the species here described, the others are natives of central and eastern Asia. Although neither the species nor the genus is, relatively, of importance as an element in the existing flora of the earth, their ancestry has been traced back, by means of fossil remains, to the time of the first appearance of the angiosperm type of vegetation in the early part of the Cretaceous Period and, under the extinct genus *Menispermites*, some twenty or more North American species have been described, besides other species under the closely allied existing genus *Cocculus*, from more recent deposits of the Tertiary and Quaternary periods.

The Canada moonseed is a slender, woody vine that commonly grows along the borders of woods and watercourses, where it may be found climbing or clambering over stone walls and bushes, the ultimate ramifications of the branches often extending to a distance of ten feet or more from the base of the main stem. The leaves vary more or less in size and considerably in shape, not only on different vines but also on a single individual vine. They are usually irregularly 3-7-lobed, but are frequently obscurely lobed or entire. They may be peltate or subpeltate, and cordate or cordate-truncate at the base, and are pale green or glaucous beneath. The petioles are conspicuously long and slender. The flowers, arranged in loose, axillary panicles, are small and greenish-white or yellowish-white in color. The fruit is a globose-oblong drupe, laterally flattened, with a spirally curved stone. When ripe it is dark greenish-blue, purplish-blue, or almost black, with a glaucous bloom, and the clusters have very much the appearance of frost grapes.

ARTHUR HOLLICK.

EXPLANATION OF PLATE. Fig. 1.—Cluster of staminate flowers. Fig. 2.—Single staminate flower, $\times 3$. Fig. 3.—Cluster of pistillate flowers. Fig. 4.—Single pistillate flower, $\times 4$. Fig. 5.—Portion of stem, with a leaf and a cluster of fruit. Fig. 6.—Seed.



SWAINSONA GALEGIFOLIA

SWAINSONA GALEGIFOLIA

Darling pea

Native of Australia

Family FABACEAE

PEA Family

Vicia galegifolia Andr. Bot. Repos. *pl.* 319. 1803.*Swainsona coronillaefolia* Salisb. Parad. Lond. *pl.* 28. 1806.*Swainsona galegifolia* R. Br. in Ait. Hort. Kew. ed. 2. 4: 327. 1812.

This *Swainsona*, representing a genus of about thirty species of low Australian shrubs, is a well-known florists' plant. It is free-flowering, easily grown and usually cultivated in odd spaces in houses of commercial flower shops, either in pots or beds. A few plants give abundance of blooms, resembling the sweet pea and useful in various forms of floral decoration. It is grown easily from cuttings or from divisions of old plants and thrives in a cool greenhouse. The white-flowered variety is usually grown, and florists and gardeners have evinced interest upon seeing the pinkish-red form blooming in our conservatories, where it is used as a pot plant in floral display. Our illustration was made from one of these plants in our Conservatory Range No. 2. Our stock came from the Royal Botanic Garden, Kew, England, in 1902. The older colored plates of *Swainsona* picture a deep red form, and horticultural literature mentions white, violet, and rose varieties.

The Darling pea is a diffuse low shrub with light green, ridged, flexuose stem, leaves at the nodes, and flower-stalks from the axils of the leaves. The leaves are compound, three to five inches long, with ten or more pairs of oval or oblong leaflets, which are green above, glaucous beneath, about an inch or two long and half as wide, and notched at the apex. The flowers are borne ten or more in a raceme at the top of a slender stalk which is longer than the leaves. Each flower is attached by a slender pedicel, one to two inches long and subtended by a minute triangular bract. The calyx is green, nearly regular, with five short teeth. The petals comprise a broad orbicular erect standard, two sickle-shaped wings, and a broad, incurved keel. The keel encloses a long slender pistil, curved upward near the apex, and ten stamens, nine of which are united for nearly their whole length, the tenth being nearly free. The whole flower is purplish pink with white blotches in the throat. The fruit is a stalked pod, about one inch long, leathery and inflated.

KENNETH R. BOYNTON.

EXPLANATION OF PLATE. Fig. 1.—Portion of stem, with leaves and flowers. Fig. 2.—Banner. Fig. 3.—Wing-petal. Fig. 4.—Keel-petal. Fig. 5.—Androecium, split open. Fig. 6.—Pod.



HAMATOCACTUS SETISPINUS

HAMATOCACTUS SETISPINUS

Twisted-rib Cactus

Native of Texas and northern Mexico

Family CACTACEAE

CACTUS Family

Echinocactus setispinus Engelm. Bost. Jour. Nat. Hist. 5: 246. 1845.*Echinocactus hamatus* Mühlenpf. Allg. Gartenz. 16: 18. 1848.*Echinopsis nodosa* Linke, Wochenschr. Gärtn. Pflanz. 1: 85. 1858.*Hamatocactus setispinus* Britt. & Rose, Cactaceae 3: 104. 1922.

The study of cacti has always been a fascinating one. Although the family is exclusively American, the interest in it has always been more pronounced in Europe. This interest rises and falls as it does in other special groups which catch the popular fancy, like the iris and dahlia. At the present time this interest is very great in Europe, in some places reaching the stage known as a "craze." Dealers are striving to get seeds and cuttings to supply the trade and making tempting offers for rare species to collectors who go into desert regions.

The recent comprehensive monograph on this family, published by the Carnegie Institution of Washington, with its full descriptions and numerous illustrations, will greatly facilitate this study. In this work a number of new genera have been described, some of which are of ornamental importance. One of these is there called *Hamatocactus*, so named because of its hooked spines.

The only species, which is here illustrated, has long been known as *Echinocactus setispinus*, but Dr. George Engelmann, the great authority on Cacti, years ago called attention to the many ways in which it differs from all the other species of *Echinocactus*. In the texture of the stem and in its ribs it resembles some of the species of *Echinocereus*, but the flowers and fruits are very different.

The plant grows wild in dry thickets of southern Texas and northern Mexico, where it is quite common and variable. Indeed, some of these forms are so striking that they have been given varietal names. The plant has some twelve synonyms, only a part of which are recorded above. The specimen used for our illustration was sent by R. D. Camp in 1921 from the vicinity of Brownsville.

The twisted-rib cactus is a small globose or short-cylindric plant four to six inches high, usually growing singly; the surface is divided into somewhat spiral ribs, usually thirteen in number. Along the

edge of the ribs are borne clusters of spines about one half inch apart. The spines are twelve to twenty in each cluster, needle-like, except one in the center which is stouter and longer than the others and hooked at the distal end. The flowers are borne at the apex of the plant, either singly or in clusters; they are usually large and lemon-yellow in color with a red eye or center. The fruit is red, small, less than half an inch in diameter, and filled with small black seeds.

J. N. ROSE.



PHLEBOTAENIA COWELLII

PHLEBOTAENIA COWELLII

Violet-tree

Native of Porto Rico

Family POLYGALACEAE

GAY-WINGS Family

Phlebotaenia Cowellii Britton, *Torreyia* 7: 38. 1907.*Phlebotaenia portoricensis* Urban, *Symb. Ant.* 5: 382. 1908.*Polygala Cowellii* Blake, *Contr. Gray Herb.* 47: 10. 1916.

We first saw this very wonderful tree in March, 1906, while driving on the military road from Ponce to Coamo Springs, Porto Rico, when a single individual stood on a steep road-bank between Juana Diaz and Coamo. This tree has since been destroyed, but in the early spring of 1922 and 1923 when we twice returned to the same region, we had the pleasure of seeing several individuals in other places. The tree is scarce, however, being valued for its hard yellowish-white wood, and in all probability has been nearly exterminated; after much exploring for botanical purposes in the Coamo region we actually know the existence of only six trees, widely scattered, although there are probably more.

It is also known to exist in the valley of the Rio Grande between Arecibo and Utuado, Porto Rico, a good many miles from the Coamo region, and it may occur between these two districts. At all events it is one of the rarest plants of the West Indies and, perhaps, the most beautiful flowering tree. When in bloom its slender branches are densely covered with myriads of violet-colored flowers which appear before or with the leaves of the season, strikingly conspicuous in the landscape. Leaves of the previous season usually persist on some of the branches, but the tree is often or usually essentially leafless when in full bloom.

The spray from which Mrs. Horne's painting, herewith reproduced, was made, was collected from a tree standing at the top of a steep river bank at Rio Caña, near Juana Diaz, Porto Rico, on February thirteenth, and the fruit on April first, 1923. Mrs. Horne obligingly came from her home at Mayaguez to visit us at Ponce and make sure of securing this important illustration; she added the fruit subsequently from specimens sent to her. The species has never before been illustrated. The Spanish names "Caracolillo" and "Palo de tortuga" are applied to it.

Only one other species of the genus is as yet known, *Phlebotaenia cuneata* Grisebach, a native of eastern Cuba, the type of the genus, described in 1860. We saw this tree in flower at Ensenada de Mora, Cuba, in March 1912; it is not as elegant as the Porto Rico species, and is not known to form as large a tree.

The violet-tree reaches a maximum height of about sixty feet, with a trunk a foot or more in diameter, and smooth gray bark. The elliptic to ovate or elliptic-obovate, bright green, glabrous, entire-margined leaves are from two to five inches long, with very many, slender, straight lateral veins, the apex pointed, the petioles short. The purple flowers are in numerous short racemes or panicles, on slender pedicels half an inch long or less. The short sepals are elliptic, unequal, ciliolate, the two interior ones (wings) about half an inch long, the lobed keel about as long. There are eight stamens, their filaments united into a split sheath. The remarkable fruit is a small flat capsule, with two, thin, flat, membranous, finely nerved, green wings, an inch long or more on one side; and two, much smaller, similar wings on the other.

N. L. BRITTON.

EXPLANATION OF PLATE. Fig. 1.—A flowering spray. Fig. 2.—Fruit.

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ADDISONIA

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AND

POPULAR DESCRIPTIONS

OF

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"the income and accumulations from which shall be applied to the founding and publication, as soon as practicable, and to the maintenance (aided by subscriptions therefor), of a high-class magazine bearing my name, devoted exclusively to the illustration by colored plates of the plants of the United States and its territorial possessions, and of other plants flowering in said Garden or its conservatories; with suitable descriptions in popular language, and any desirable notes and synonymy, and a brief statement of the known properties and uses of the plants illustrated."

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STENOCARPUS SINUATUS

STENOCARPUS SINUATUS

Queensland Tuliptree

Native of Australia

Family PROTEACEAE

PROTEA Family

Stenocarpus sinuatus Endl. Gen. Pl. Suppl. 4: 88. 1847.

The famous Queensland tuliptree is presented in this work as a fitting first illustration of the *Proteaceae*, a family of mainly South African and Australian plants noted in the former country for the great size and brilliance of its thistle-like blooms, and in the latter for oddity of flowers, the timber value of its trees, or the drought-resisting qualities of its shrubs.

The proteas themselves are seldom cultivated today, but were enthusiastically collected and grown more than one hundred years ago. At Clapham, in England, the writer on *Proteaceae*, Joseph Knight, grew hundreds of kinds for George Hibbert, Esq. Those with flowers in dense, globular heads were striking in appearance and were commonly called thistles. The Australian genera of the family, especially species of the dry-land *Grevillea* and *Hakea*, are grown to quite an extent in California, and the "silk oak," *Grevillea robusta*, is commonly grown from seed by florists.

Stenocarpus is of the *Embothria* tribe, which includes also the Waratah, a popular Australian flower, and *Lomatia*, grown in our conservatory for low foliage. Two fine trees of *Stenocarpus sinuatus*, which have been in our collection twenty years, may be seen on either side of the west door upon entering the Central Display House. One of these trees flowered in November, 1919, and this plate was made from it.

The Queensland tuliptree or Yiel Yiel is a tree sixty to one hundred feet high, evergreen, with alternate leaves which are small and entire or few-lobed when very young, deeply pinnatifid and a foot long or more when mature. The flowers are on green peduncles, each of which bears several umbels of from twelve to twenty red flowers on half-inch pedicels, radiating in a single row around the disk-like top of the peduncle. Each flower, when expanded, has four slender perianth-segments, about an inch long, red, and yellow-tipped; three of the segments are reflexed, one nearly erect, and each bears a sessile anther in its concave spoon-like end. The pistil is stipitate, with a short pubescent ovary, and long smooth style, which bears at its apex an oblique yellow disk containing the stigma; the entire pistil, including the stipe, strongly resembles a

perianth-segment. The fruit is a dehiscent follicle, two-valved, the seeds separated by a thin lamina.

KENNETH R. BOYNTON.

EXPLANATION OF PLATE. Fig. 1.—Leaf. Fig. 2.—Branch, with flowers. Fig. 3.—A single flower.



HAMELIA AXILLARIS

HAMELIA AXILLARIS

Yellow Hamelia

Native of the West Indies

Family RUBIACEAE

MADDER Family

Hamelia axillaris Sw. Prodr. 46. 1788.*Hamelia lutea* Rohr; J. E. Smith, in Rees' Cycl. 17: *Hamelia* no. 3. 1811.

The genus *Hamelia*, dedicated by Jacquin to the distinguished French botanist Du Hamel du Monceau, consists of some twenty-five known species of shrubs and small trees, natives of tropical and subtropical America. One of them, *Hamelia erecta* Jacq., extends northward into southern Florida and to the Bahamian island New Providence, where it grows in the hammocks or coppices surrounded by forests of the Caribbean pine. They all have broad, opposite or whorled, petioled entire leaves; flowers in terminal cymes, the nearly tubular or subcampanulate corollas yellow or red, showy in some species; the five stamens are borne near the base of the corolla, with short filaments and long narrow anthers; the fruits are oblong, 5-seeded berries.

Hamelia axillaris, here illustrated, inhabits wet or moist mountain forests in Jamaica, Cuba, Hispaniola, Porto Rico, the Virgin Islands, some of the Lesser Antilles, and northern South America.

The plant which supplied materials for our illustration has been grown under glass at the New York Botanical Garden since 1902, when it was received from the Buffalo Botanical Garden, originally obtained from the West Indies and probably from Jamaica, by the late John F. Cowell.

The yellow hamelia is a low, often straggling shrub, seldom more than six feet high, with slender branches which are puberulent when young. The thin, nearly smooth leaves are from two to six inches long, slender-stalked, ovate to elliptic, pinnately veined, abruptly pointed, narrowed at the base. The cymes of yellow flowers are shorter than the leaves; the very small calyx has five short lobes; the bright yellow corolla is cylindric, narrowed below, about half an inch long, with five short and broad lobes. The black berries are three or four lines long. The plant is known in Porto Rico as Balsamillo and in Santo Domingo as Buzunuco.

N. L. BRITTON.

EXPLANATION OF PLATE. Fig. 1.—A flowering branch. Fig. 2.—A fruiting branch. Fig. 3.—A corolla laid open, showing the stamens. Fig. 4.—The pistil.



SALVIA PITCHERI

SALVIA PITCHERI

Pitcher's Sage

Native of the south central United States

Family LAMIACEAE

MINT Family

Salvia Pitcheri Torr.; Benth. Lab. 251. 1833.*Salvia azurea grandiflora* Benth. in DC. Prodr. 12: 302. 1848.

This plant has been confused with the southern blue sage, *Salvia azurea* Lam., which has much smaller flowers and is therefore less desirable as an ornamental plant. Some botanists regard it as a variety, and in seed catalogues it is perhaps most commonly given as *S. azurea* var. *grandiflora*.

Most of the plants belonging to the Mint Family have four stamens, the upper two with longer filaments. In *Salvia* and related genera, the lower pair is either lacking or without anthers. The anthers in most flowering plants have two anther-cells, which are separated by a tissue called the connective. In *Salvia* and related genera, the connective is elongate, and jointed to the filament at the middle, one end standing nearly straight up while the other is strongly reflexed (see *fig. 3*). The upper branch bears an anther-cell at the summit, while on the lower end the cell is usually wanting or else very small. This structure evidently has developed in order to facilitate fertilization by insects. An insect enters the flower and when it tries to back out the reflexed lower end of the connective catches in the hairs or legs of the insect. This results in a see-saw motion in the connective causing the upper end to shake out the pollen from the cell at the tip. The pollen falls on the back of the insect and is carried to the next flower, where the two claw-like tips of the pistil rake it off (see *fig. 2*).

Pitcher's sage is a perennial herb. The stem and foliage are slightly grayish from a very fine mealy pubescence, the individual hairs being scarcely distinguished by the naked eye. The stem is two to five feet high and, as in nearly all plants of the mint family, four-angled. The leaves are opposite, more or less stalked, two to five inches long, the lower lance-shaped, the upper linear in outline and more or less finely and distantly saw-toothed. The small flower-clusters form elongate dense spikes terminating the stem and branches. The calyx bears many ribs and is two-lipped, the upper lip being entire, the lower two-toothed. The corolla is bright blue, often an inch long, deeply two-lipped. The upper lip is narrow, entire and hooded; the lower is broad, spreading and

broadly three-lobed. The middle lobe is very large, undulate and with a wavy margin. The lower branch of the anthers has no anther-cell. The fruit consists of four egg-shaped slightly compressed minutely punctate nutlets.

P. A. RYDBERG.

EXPLANATION OF PLATE. Fig. 1.—Upper part of the plant. Fig. 2.—Style and stigma, $\times 2$. Fig. 3.—Stamens, $\times 2$. Fig. 4.—Fruit, $\times 4$.



SYNDESMON THALICTROIDES

SYNDESMON THALICTROIDES

Rue Anemone

Native of the eastern United States and southern Canada

Family RANUNCULACEÆ

CROWFOOT Family

Anemone thalictroides L. Sp. Pl. 542. 1753.*Thalictrum anemonoides* Michx. Fl. Bor. Am. 1: 322. 1803.*Syndesmon thalictroides* Hoffmg. Flora 15: Intell.-bl. 4: 34. 1832

The rue anemone is one of the most abundant of the several wild flowers popularly known as anemone, which is both its common and its original generic name. The leaves are similar in appearance to those of *Thalictrum* or meadow rue, hence the scientific specific name, *thalictroides*, and the descriptive common prefix, rue.

It was dissociated from the genus *Anemone* by André Michaux, in 1803, and transferred to *Thalictrum*, from which genus it was differentiated by Hoffmannsegg, in 1832, and made the type of a new genus, *Syndesmon* (a name derived from the Greek, signifying bound together), in recognition of its dual characters of *Anemone* and *Thalictrum*. As thus named and described it constitutes a "monotypic" genus, represented only by our one species, which is limited in its natural distribution to the eastern part of the North American continent.

Its natural habitat is woods and shady places, and its geographic range is from Minnesota, Ontario, and northern New England southward to Kansas, Tennessee and Florida, and eastward to the Atlantic Coast.

The rue anemone is a glabrous perennial, slender and delicate in all its parts. The flowering stem arises early in the spring from a cluster of tuberous roots. The flowers are arranged in a terminal leafy umbel, on long, slender pedicels. The conspicuous sepals, five to ten in number, white or occasionally tinged with pink, are delicate and petaloid in appearance and are generally mistaken for petals. The basal leaves—those that arise later from the base of the flowering stem—are petioled and 2-3 ternately compound. The leaves of the umbel are sessile, the long petioled leaflets simulating individual leaves.

ARTHUR HOLLICK.

EXPLANATION OF PLATE. Fig. 1.—Entire plant, with flowers. Fig. 2.—Fruit. Fig. 3.—Achene, $\times 5$.



ARDISIA POLYCEPHALA

ARDISIA POLYCEPHALA

Spear-flower

Native of the East Indies

Family MYRSINACEAE

MYRSINE Family

Ardisia polycephala Wall.; A.D.C. Trans. Linn. Soc. 17: 118. 1834.

The genus *Ardisia*, so named from a Greek word meaning "point" and referring in this case to the tip of the anther, is represented by several hundred species in the tropics of both hemispheres. Only a few of the species have found their way into general cultivation, perhaps because the plants are not hardy in the open outside of the tropics and subtropics, and at the North, consequently, can be grown only under glass.

The subject of this illustration lends itself to effective planting in various ways. It may be used, in the open, for groups, for borders, and for hedges. It is free from organic diseases. The glossy deep-green leaves stand in beautiful contrast to the clusters of white or pinkish flowers and the glossy fruits which are red before they later turn purple-black or nearly black. The flowering period is protracted and overlaps the fruiting period, hence there is often much color to break the monotony of the greenery. The plants thrive in a soil of a mixture of sand, loam, and humus. In addition to propagation by seeds, the plant is easily grown from cuttings. The rooted cuttings transferred to pots and promptly brought into flower and fruit furnish conservatory subjects, and give us an additional "Christmas-berry" which is quite welcome when the native vegetation is dormant in temperate climes.

The plants flower mostly in the summer and fruit through the winter.

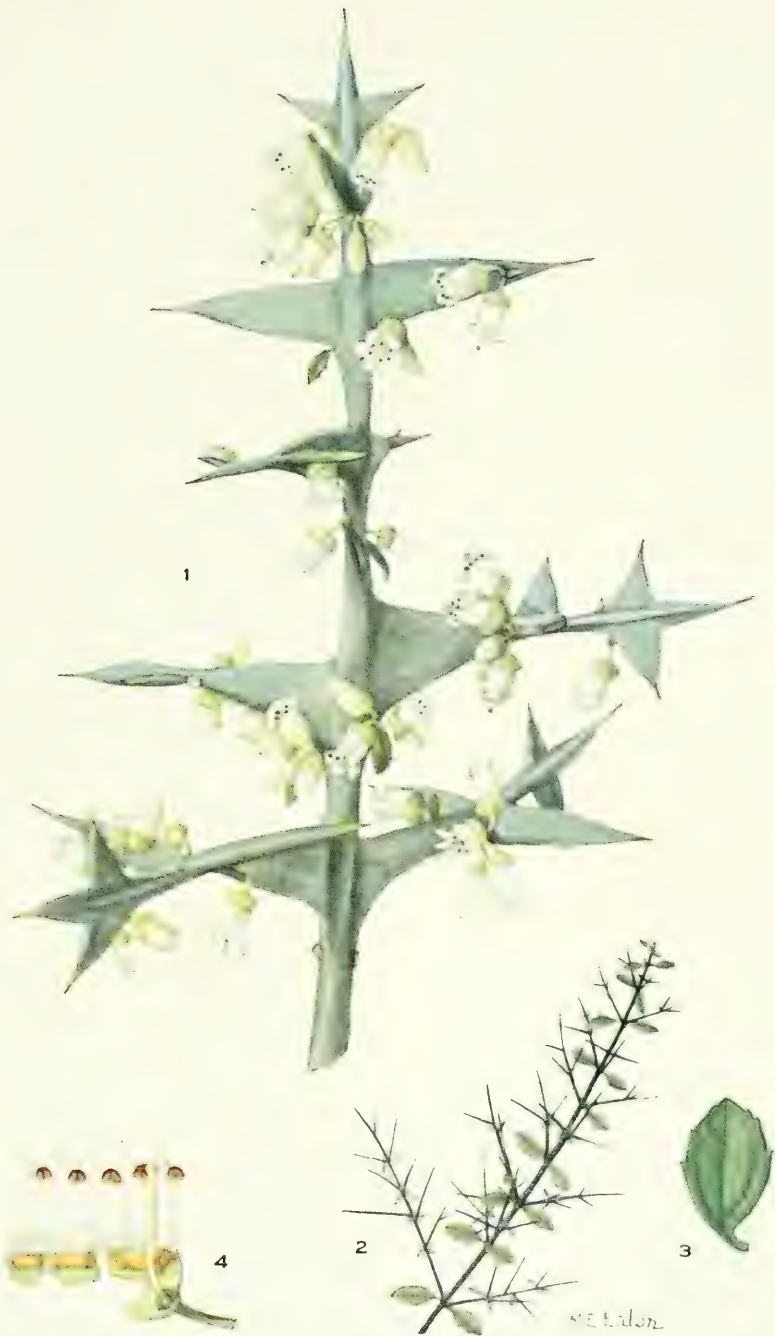
Ardisia polycephala, so called on account of the numerous flower clusters borne along the stems, is native in the East Indies. The plants from which the accompanying painting was made were raised in the conservatories of the New York Botanical Garden from seeds brought from the reservation of Charles Deering at Buena Vista, Florida, in 1917.

This spear-flower is an evergreen shrub six feet tall or less, with irregularly branched stems. The leaves are numerous, alternate but quite irregularly placed, and sometimes apparently opposite. The blades are thickish, oblanceolate to narrowly elliptic, mostly 2-5 inches long, acute, entire, gradually narrowed into short peti-

ole-like bases. The flowers are borne in axillary cluster-like cymes on stalks about an inch long or less. The flower-stalks are stout, somewhat clavate, mostly curved, usually shorter than the common stalk of the cluster. The flower-buds are ovoid or conic-ovoid, pointed. The five calyx-lobes are half-orbicular, minutely fringed, copiously dotted, and persistent under the fruits. The corolla is white or pinkish, with ovate or elliptic-ovate abruptly pointed lobes much longer than the tube, recurved in anthesis and with numerous short dark streaks. The stamens are erect, about a quarter of an inch long, with greenish-pink filaments and longer yellowish anther-sacs which cohere in a tube around the style. The short ovary is abruptly narrowed into the slender needle-like spirally twisted style. The fruit is a berry-like drupe, depressed-globose, about a quarter of an inch in diameter, purple-black or almost black and shiny when mature.

JOHN K. SMALL.

EXPLANATION OF PLATE. Fig. 1.—Piece of branch with leaf and flower-cluster. Fig. 2.—A branch with clusters of fruits. Fig. 3.—Two lobes of a corolla, $\times 2$. Fig. 4.—The moraecium surrounding the gynoecium, $\times 2$. Fig. 5.—A stamen, $\times 4$.



COLLETIA CRUCIATA

(Plate 286)

COLLETIA CRUCIATA

Anchor-plant

Native of Brazil and Uruguay

Family RHAMNACEAE

BUCKTHORN Family

Colletia cruciata Gill. & Hook. Bot. Misc. 1: 152. 1830.

Colletia is a genus of about a dozen species of South American thorny shrubs, related to the well-known buckthorn used for hedges. It is evident from even a casual view of *Colletia* that the spines with which it is so well equipped furnish an outer defense against any marauders one might need a hedge for. Another sort, *C. spinosa*, is similarly equipped, but the spines are awl-shaped and less wicked.

Plants of this have been raised in our greenhouse from seed sent from La Mortola, on the Italian Riviera, where it has been grown for nearly fifty years. The anchor-plant has been in our coolhouse collection for twenty years, the oldest specimen coming from the Department of Parks, Bronx.

Though extremely interesting, and easily grown in any cool greenhouse and readily propagated from seed or cuttings, it is too vicious to handle for decorative work, but belongs with the xerophytic plants.

The anchor-plant is a shrub four or five feet high, with tortuous green stems whose branches are series of broad, flattened, often triple-pointed decurrent spines with very sharp tips. The leaves, if present, are minute and elliptic, with entire margins. The flowers are in axillary whorls usually at the bases of the spines. Petals are wanting, each flower having a small bell-shaped colored calyx with five lobes; five stamens inserted between the calyx-lobes; a roundish three-celled ovary, simple elongated style, and obscurely three-lobed stigma; within the calyx at its base is a narrow, fleshy, ring-like disc.

KENNETH R. BOYNTON.

EXPLANATION OF PLATE. Fig. 1.—Flowering branch. Fig. 2.—Leafy shoot. Fig. 3.—Leaf, $\times 3$. Fig. 4.—Flower, split open, $\times 2$.



LAGETTA LAGETTO

LAGETTA LAGETTO

Lace-bark Tree

Native of Jamaica, Cuba, and Haiti

Family THYMELAEACEAE

MEZEREON Family

Daphne Lagetto Sw. Prodr. 63. 1788.*Lagetta linearia* Lam. Encyc. 3: 376. 1791.*Lagetta Lagetto* Nash, Jour. N. Y. Bot. Gard. 9: 117. 1908.

The genus *Lagetta*, proposed by Jussieu, and published by Lamarck in 1789, includes four species of trees or shrubs, related to *Daphne*. They are natives of Cuba, but the one here described, the best known of the four, grows also in Jamaica and in Haïti. The most recently discovered one, *Lagetta pauciflora*, is known only from herbarium specimens collected by the late J. A. Shafer in February, 1910, on Loma Mensura, Oriente, Cuba, while on a New York Botanical Garden collecting expedition in the mountains of northeastern Cuba.

The lace-bark tree becomes in Jamaica forests about thirty feet high with a trunk about six inches in diameter. The yellowish-white inner bark is composed of several layers of delicate but strong interlocking fibres and is readily separable from the outer bark and from the wood; it is bleached by washing and exposure to sunlight and is made into various objects which are sold in Jamaica for souvenirs; some of these may be seen in the museums of the Garden. This fibrous bark was formerly made into ropes, capes, bonnets, and even entire suits of wearing apparel.

Our illustration was made in April 1923 from a plant under glass at the New York Botanical Garden, received from the Royal Botanic Gardens, Kew, England, in 1902. It has flowered repeatedly, during the past twenty years, and was made the subject of an interesting account of the species, with illustrations, by the late George V. Nash in the Journal of the Garden for June 1908.

The leaves of the lace-bark tree are alternate, ovate, two to four inches long, rather leathery, glabrous, light green, shining and short-petioled; the flowers are borne in narrow drooping spikes; the white nearly cylindric perianth, a little swollen below the middle, is about two-thirds of an inch long, with short ovate lobes; the stamens are nearly sessile; the pistil is hairy, the style slender, the stigma truncate; the oblong or ellipsoid fruit is about one-third of an inch long.

N. L. BRITTON.

EXPLANATION OF PLATE. Fig. 1.—A flowering branch. Fig. 2.—A flower.
Fig. 3.—The pistil.



STEPHANANDRA INCISA

STEPHANANDRA INCISA

Cutleaf Stephanandra

Native of Japan and Korea

Family ROSACEAE

ROSE Family

Spiraea incisa Thunb. Fl. Jap. 213. 1784.*Stephanandra flexuosa* Sieb. & Zucc. Abh. Akad. Münch. 3: 739. 1843.*Stephanandra incisa* Zabel, Gart.-Zeit. 4: 510. 1885.

The hardier of the two cultivated species, the large-leaved stephanandra, has been illustrated in this work (plate 179), and the make-up of the genus and its horticultural value discussed. The cutleaf stephanandra is a more tender, slender shrub, with smaller finely cut leaves, wiry stems and light graceful sprays of bloom; during severe winters it is liable to be killed back to the ground, but will send up new growth.

As a delicate tracery mass of flowers and foliage this spiraea-like shrub is valuable. It may be propagated by seeds, cuttings, or divisions.

The illustration was made from a group of plants in the Fruticetum which is now twenty-eight years old.

The cutleaf stephanandra is a shrub, usually four to five feet high in cultivation, the old shoots with gray, rough, peeling bark, the young growths yellow, smooth, with ultimate twigs very slender and winter-buds small and bright red. The leaves are triangular, about an inch long, three-fourths as wide, deeply incised, acuminate, green above and gray below. The flowers are borne in racemes at the ends of the slender branches; they are white, small and fragile, with five petals, five sepals, ten stamens and one carpel becoming a one- or two-seeded partially dehiscent pod.

KENNETH R. BOYNTON.

EXPLANATION OF PLATE. Fig. 1.—Portion of stem, with flowers. Fig. 2.—Flower, $\times 6$. Fig. 3.—Fruit, $\times 5$.

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